**MWD**
*METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA*

***Office of the General Manager***

February 13, 1998

Mr. Kevin Mayer
Remedial Project Manager
U.S. Environmental Protection Agency
Region 9 - Mail Code SFD73
75 Hawthorne Street
San Francisco, California 94105

Dear Kevin:

Metropolitan's Concerns with Perchlorate in Colorado River Water

The Metropolitan Water District of Southern California (Metropolitan) recently detected perchlorate in its Colorado River water supply. Investigation has demonstrated that the perchlorate is entering the Colorado River from Lake Mead via the Las Vegas wash. Perchlorate-laden groundwater from nearby industrial facilities is the source of perchlorate. To date, levels found have ranged from 5 to 9 parts per billion (ppb), well below the California Action Level of 18 ppb. The Southern Nevada Water Authority (SNWA), which also withdraws Colorado River water from Lake Mead, has recently observed perchlorate levels up to 16 ug/l in their intake.

Although our water supplies are well below the perchlorate standard, we remain concerned because of the following reasons:

1. Perchlorate detection at any level could be cited in multi-plaintiff lawsuit. Perchlorate, as well as solvents, has been cited in recently filed multi-plaintiff lawsuits seeking compensation for health effects claimed to result from levels of these contaminants even though appropriate state and federal standards were being met. The threat of these suits is very real and has caused great concern among our member agencies and subagencies (see Attachment No. 1). These lawsuits could have a huge impact on water suppliers. For example, a recent, similar multi-plaintiff lawsuit against Pacific Gas and Electric was settled out of court for hundreds of millions of dollars.

2. Perchlorate detection must be reported in our Consumer Confidence Reports. Metropolitan, its member agencies, and its subagencies must report perchlorate detections in our annual Consumer Confidence Reports if perchlorate is found above the detection limit of 4 ppb. These reports are distributed to our 16 million consumers. Reporting a perchlorate detection will undermine public

confidence in our drinking water (see the excellent water quality we are currently able to report to our consumers in Attachment No. 2).

3. Perchlorate occurrence reduces our ability to make maximum use of groundwater resources. To date, 13 wells in Southern California have been identified as having perchlorate above 18 ppb, and most of these have been shut down. Treatment of these wells would be extremely expensive, involving technologies such as reverse osmosis. Blending with water that is free of perchlorate would be viable if our surface water were free of perchlorate, which it is not. Also, contamination of groundwater basins will occur as a result of using Colorado River water for recharge. The net result could be increased demands on our need for water from the Sacramento River Bay/Delta, posing a new set of environmental problems.

4. California has legislation pending that would require a primary drinking water standard. Senator Byron Sher has introduced legislation that would require a California Maximum Contaminant Level for perchlorate by July 1, 1999. This legislation was introduced as a result of the perception that the current Action Level is not adequately protective of public health. If the standard setting process results in a lowering of the perchlorate standard, Metropolitan and other water agencies could be facing high treatment costs to meet a lower standard.

We have estimated that it will take a minimum of three to five years for the Colorado River to flush itself if the contamination source in Henderson, Nevada were eliminated immediately. It may take significantly longer. There are no economically viable treatment options which could be installed quickly to remove perchlorate. Our only option is to eliminate the contamination through source protection as soon as possible.

Given EPA's emphasis on source protection, we would hope you feel as strongly about this issue as we do. Metropolitan, our member agencies and our subagencies have become extremely concerned with this perchlorate contamination problem. We look forward to EPA's assistance in cutting off this source as quickly as possible. If we can be of assistance, please let us know.

Sincerely,

Mark Beuhler

Mark D. Beuhler
Director of Water Quality

MDB/ac
Attachments

Attachment No 1

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# Park Water Company

October 24, 1997

E. Thornton Ibbetson
Central Basin Municipal Water District
17140 S. Avalon Blvd., Suite 210
Carson, CA 90746-1218

Dear Mr. Ibbetson:

As our representative on the Metropolitan Water District of Southern California Board of Directors, I wish to communicate to you a concern that Park Water Company has regarding a recent Board decision. The Board has decided to approve the elimination of the use of blending State Project water at the Diemer and Weymouth water treatment plants for the remainder of the year. This is done to reduce the cost of water, as State Project water is more expensive. Park thinks we have compelling reason for the Board to reconsider this decision.

This decision means that 100% Colorado River water will be coming out of these treatment plants. At this time, this creates an additional problem to the usual exceedance's of several secondary drinking water standards and the taste and odor problems sometimes associated with 100% Colorado River water. That problem is the presence of perchlorate in Colorado River Water in concentrations approximately 50% of the newly created California Action Level of 18 ug/L (micrograms per liter or parts per billion).

With the typical 25% blend of State Project Water, Park Water Company has been unable to detect perchlorate at the detection limit for reporting (DLR) in our six connections to MWD. Since MWD's current treatment technologies do not remove perchlorate, we anticipate we will be getting fairly high detectable levels of perchlorate at our connections. We will confirm this with sampling this week.

You may be aware that there are several law suits against water utilities in the San Gabriel Valley for serving water to their customers with perchlorate and other chemicals <u>below drinking water standards.</u> Suits have also been filed against the Jet Propulsion Laboratory and Cal Tech in Pasadena for supposedly contaminating the aquifer with perchlorate. These suites have been filed and must be defended, at a considerable cost to those utilities and institutions.

P.O. Box 7002 • 9750 Washburn Road • Downey, California 90241 • Phone 562.923.0711 • Fax 562 861.5902

While the adverse health effects are not entirely determined at this point in time, it is a lack of scientific data and information that may give us a false sense of security, not a preponderance of evidence. It is doubtful that consumers of MWD water will be happy to learn that an operational decision has been made that puts measurable levels of a rocket fuel additive into their drinking water. It is impossible to determine at this time what the tort lawyers will think of this.

While the continued blending of State Project water will cost more, Park Water Company encourages you to change the Board vote to discontinue blending at the Diemer and Weymouth treatment plants. This would be good public policy for MWD from a public relations standpoint and from a legal defense standpoint to discourage possible legal action against MWD. The extra cost of this water will be well worth the avoided legal costs, win or lose.

In addition, the usual public relations problems utilities have with customers can be avoided because 100% Colorado River water exceeds several secondary drinking water standards.

I would be happy to discuss this issue with you further at your convenience. Please call if you have any questions.

Very truly yours,

Ted D. May
Vice President and General Manager

TDM:cjv

cc: Paul Jones
H. H. Wheeler
Gary Lynch

**MWD**
METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA
*SACRAMENTO LEGISLATIVE OFFICE*
*1121 L Street, Suite 900, Sacramento, CA 95814*

SOURCE: Sacramento Bee

DATE: December 31, 1997

# Water fears spur claims

## Lawyers lining up in Rancho Cordova

By Peter Hecht
Bee Staff Writer

Seizing on reports of drifting plumes of underground chemical contaminants, attorneys are setting up offices in Rancho Cordova and taking out advertisements to solicit clients who fear their drinking water could be tainted.

One Rancho Cordova law firm took out a large advertisement in Sunday's Bee Neighbors section, asking potential clients – all in capital letters – "Have you been damaged by perchlorate contamination?"

Meanwhile, a Southern California law firm with a record of multimillion-dollar settlements in environmental cases has set up a full-time office in Rancho Cordova. Earlier this month, it filed suit on behalf of 47 residents – charging Aerojet, the McDonnell Douglas Corp. and three water providers with allowing chemical contaminants to taint drinking water supplies.

The flurry of legal activity was triggered by the discovery early this year of perchlorate – a rocket fuel component – in five wells near the Aerojet General Corp. plant in Rancho Cordova.

In the past three years, drifting underground plumes of chemicals, including perchlorate and other contaminants, have forced the closure of a total of 12 wells that served more than 20,000 people in the Rancho Cordova area.

At high doses, perchlorate can interfere with the thyroid function and – in extreme cases – cause bone marrow disease. However, federal and state officials contend that the detected contamination levels were too low to trigger any significant health effects.

Environmental health specialists from Sacramento to Washington are conducting lab tests and considering other studies to determine the perchlorate danger.

Attorneys pressing legal claims say they are representing residents' concerns and pushing for more investigation into the extent of the groundwater problems. Critics, including spokespersons for local water providers, claim the legal activity is unnecessarily inciting residents' fears.

"This is a matter that is so big, this is major litigation. It's going to involve major plaintiffs' firms," said Michael A. Hackard, a Rancho Cordova attorney who is working with a Beverly Hills law firm in pursuing a potential case.

A recent lawsuit from another law firm claimed defendants, including Aerojet, McDonnell Douglas and the Cordova Chemical Co., dumped numerous toxic substances during the Cold War era, creating "a plume of contaminated groundwater" that "continues to spread to surrounding neighborhoods."

Aerojet and the U.S. Air Force have spent more than $160 million for toxic cleanup operations for the Aerojet site since the early 1980s. While officials couldn't be reached for comment on the suit, Suzanne Phinney, Aerojet's vice president for environmental safety, recently said the company is undertaking "the largest cleanup operation in the world."

On the Aerojet property, numerous fuels and solvents were dumped as Aerojet and McDonnell Douglas assembled and tested launch vehicles used for space and defense programs, including Minuteman and Titan missiles and Delta satellite boosters.

Spokesmen for three regional water providers vehemently denied charges in the recent lawsuit, which claimed they "knowingly operated and maintained wells which provided contaminated drinking water."

"There's a group of Southern California attorneys that have decided that they're going to get rich quick by suing all the water purveyors," responded Herb Niederberger, manager of operations for the Citizens Utility Corp. "... They're preying on people's fears and they're attacking the wrong people."

Citizens Utility itself sued the Air Force over pollution drifting toward its wells from the former Mather Air Force Base. Niederberger said the affected Citizens' wells – none of which were contaminated with perchlorate – were shut down before any chemical levels exceeded safe drinking standards.

John Redding, district manager for the Arden-Cordova Water Service, which had three drinking water wells tainted by perchlorate, said the wells were shut down immediately and that residents were connected to alternate drinking supplies. "We're making sure the water we provide is safe," he said.

## Class Action Lawsuits Involving Water Supplies in MWD Service Area as of 8/6/97

| | | | |
|---|---|---|---|
| Case | Filed: January 10, 1997<br><br>By:<br>Wasserman, Comden & Casselman, and<br>Girardi & Keese<br><br>Assigned to: Judge Dzintra Janavs | Filed: April 24, 1997<br><br>By:<br>Engstrom, Lipscomb & Lack; Girardi & Keese, and<br>Dewitt, Algorri & Algorri | Filed: July 29, 1997<br><br>By:<br>Rose, Klein & Marias<br><br>Assigned to: Judge Wendell Mortimer, Jr. |
| Against | Jet Propulsion Laboratory, California Institute of Technology | Southern California Water Company | "Polluters", including:<br>Aerojet<br>Huffy<br>Mobil Oil<br>Wynn Oil<br>Hartwell<br>Fairchild Industries<br>Oil & Solvent Process<br>Baxter Healthcare<br>Azusa Land Reclamation<br><br>Water Companies:<br>Suburban Water<br>Southwest Water<br>Covina Irrigation<br>Calif. Domestic<br>San Gabriel Valley Water |
| Complaint For | Battery<br>Wrongful death<br>Survival action<br>Negligence<br>Strict liability<br>Intentional infliction of emotional distress<br>Negligent infliction of emotional distress<br>Public nuisance | Negligence<br>Wrongful death<br>Strict liability<br>Trespass<br>Public nuisance<br>Private nuisance<br>Negligence *per se*<br>Strict liability for ultrahazardous activity<br>Fraudulent concealment | Negligence<br>Wrongful death<br>Strict liability<br>Trespass<br>Continuing trespass<br>Public nuisance<br>Private nuisance<br>Continuing nuisance<br>Negligence *per se*<br>Absolute liability for ultrahazardous activity<br>Fraudulent concealment |
| Allegations | Discharge of highly toxic and dangerous materials into the ground, groundwater, air and sewers at or near the site, including:<br><br>Various carcinogenic hydrocarbons<br>Bromodichloromethane<br>Carbon tetrachloride<br>Chloroform<br>Dichloromethane<br>Methylene chloride<br>Vinyl chloride<br>Various metals<br>TCE, MEK, $CCl_4$<br>Freon 113, THF, Toluene<br>1,1,1-TCA, PCE, "Nitrates"<br>Benzene, PCBs, 1,2-DCA | Maintenance of contamination in well water resulting in contamination of groundwater, soil, subsurface soil and air with:<br><br>TCE<br>PCE<br>$CCl_4$<br>Other solvents | Release and/or disposal of hazardous contaminants including:<br><br>TCE<br>PCE<br>$CCl_4$, and/or **perchlorate**<br><br>into the soil, air and/or groundwater located in or about the San Gabriel Valley |
| Communities | Pasadena | Arcadia<br>Monrovia<br>Temple City<br>El Monte | Arcadia, Azusa, Baldwin Park, Covina, El Monte, Glendora, Hacienda Heights, Irwindale, Rosemead, San Gabriel, South El Monte, West Covina |
| Superior Ct. | Los Angeles | Just moved to Pasadena | Pomona |

Attachment No. 2

Metropolitan Water District of Southern California

# ANNUAL WATER QUALITY REPORT 1996 (a)

| PARAMETER | MCL | FILTRATION PLANT EFFLUENTS Weymouth | Diemer | Jensen | Skinner | Mills | Overall range for all plants |
|---|---|---|---|---|---|---|---|
| Percent State Project Water | NS | 15 | 14 | 100 | 18 | 99 | 0-100 |
| PRIMARY STANDARDS—Mandatory Health-Related Standards | | | | | | | |
| CLARITY | | | | | | | |
| Filter Effluent Turbidity (NTU) | 0.5 (b) | 0.07 | 0.08 | 0.07 | 0.08 | 0.08 | 0.06-0.11 |
| MICROBIOLOGY (c) | | | | | | | |
| Total Coliform | 5.0% | Distribution-System-Wide Monthly Average = 0.12% | | | | | 0-1.1% |
| Fecal Coliform/*E. coli* | (c) | Distribution-System-Wide Average and Range = No Acute Violations | | | | | |
| ORGANIC CHEMICALS mg/L | | | | | | | |
| *Pesticides PCBs* | | | | | | | |
| Alachlor | 0.002 | ND | ND | ND | ND | ND | ND |
| Atrazine | 0.003 | ND | ND | ND | ND | ND | ND |
| Bentazon | 0.018 | ND | ND | ND | ND | ND | ND |
| Carbofuran | 0.018 | ND | ND | ND | ND | ND | ND |
| Chlordane | 0.0001 | ND | ND | ND | ND | ND | ND |
| 2,4-D | 0.07 | ND | ND | ND | ND | ND | ND |
| Dalapon | 0.2 | ND | ND | ND | ND | ND | ND |
| Dibromochloropropane (DBCP) | 0.0002 | ND | ND | ND | ND | ND | ND |
| Dinoseb | 0.007 | ND | ND | ND | ND | ND | ND |
| Diquat | 0.02 | ND | ND | ND | ND | ND | ND |
| Endothall | 0.1 | ND | ND | ND | ND | ND | ND |
| Endrin | 0.002 | ND | ND | ND | ND | ND | ND |
| Ethylene dibromide (EDB) | 0.00005 | ND | ND | ND | ND | ND | ND |
| Glyphosate | 0.7 | ND | ND | ND | ND | ND | ND |
| Heptachlor | 0.00001 | ND | ND | ND | ND | ND | ND |
| Heptachlor epoxide | 0.00001 | ND | ND | ND | ND | ND | ND |
| Lindane | 0.0002 | ND | ND | ND | ND | ND | ND |
| Methoxychlor | 0.04 | ND | ND | ND | ND | ND | ND |
| Molinate | 0.02 | ND | ND | ND | ND | ND | ND |
| Oxamyl | 0.2 | ND | ND | ND | ND | ND | ND |
| Pentachlorophenol | 0.001 | ND | ND | ND | ND | ND | ND |
| Picloram | 0.5 | ND | ND | ND | ND | ND | ND |
| Polychlorinated Biphenyls (PCBs) | 0.0005 | ND | ND | ND | ND | ND | ND |
| Simazine | 0.004 | ND | ND | ND | ND | ND | ND |
| 2,4,5-TP (Silvex) | 0.05 | ND | ND | ND | ND | ND | ND |
| Thiobencarb | 0.07(#0.001) | ND | ND | ND | ND | ND | ND |
| Toxaphene | 0.003 | ND | ND | | | | |
| *Semivolatiles* | | | | | | | |
| Benzo(a)pyrene | 0.0002 | ND | ND | ND | ND | ND | ND |
| Di(2-ethylhexyl)adipate | 0.4 | ND | ND | ND | ND | ND | ND |
| Di(2-ethylhexyl)phthalate | 0.004 | ND | ND | ND | ND | ND | ND |
| Hexachlorobenzene | 0.001 | ND | ND | ND | ND | ND | ND |
| Hexachlorocyclopentadiene | 0.05 | ND | ND | ND | ND | ND | ND |
| 2,3,7,8-TCDD (Dioxin) | $3x10^{-8}$ | ND | ND | ND | | | |
| *Volatiles* | | | | | | | |
| Benzene | 0.001 | ND | ND | ND | ND | ND | ND |
| Carbon Tetrachloride | 0.0005 | ND | ND | ND | ND | ND | ND |
| 1,2-Dichlorobenzene | 0.6 | ND | ND | ND | ND | ND | ND |
| 1,4-Dichlorobenzene | 0.005 | ND | ND | ND | ND | ND | ND |
| 1,1-Dichloroethane | 0.005 | ND | ND | ND | ND | ND | ND |
| 1,2-Dichloroethane | 0.0005 | ND | ND | ND | ND | ND | ND |
| 1,1-Dichloroethylene | 0.006 | ND | ND | ND | ND | ND | ND |
| cis-1,2-Dichloroethylene | 0.006 | ND | ND | ND | ND | ND | ND |
| trans-1,2-Dichloroethylene | 0.01 | ND | ND | ND | ND | ND | ND |
| Dichloromethane (methylene chloride) | 0.005 | ND | ND | ND | ND | ND | ND |
| 1,2-Dichloropropane | 0.005 | ND | ND | ND | ND | ND | ND |
| 1,3-Dichloropropene | 0.0005 | ND | ND | ND | ND | ND | ND |
| Ethylbenzene | 0.7 | ND | ND | ND | ND | ND | ND |
| Methyl tert-butyl-ether (MTBE) | NS | ND | ND | ND | ND | ND | ND |
| Monochlorobenzene | 0.07 | ND | ND | ND | ND | ND | ND |
| Styrene | 0.1 | ND | ND | ND | ND | ND | ND |
| 1,1,2,2-Tetrachloroethane | 0.001 | ND | ND | ND | ND | ND | ND |
| Tetrachloroethylene | 0.005 | ND | ND | ND | ND | ND | ND |
| Toluene | 0.15 | ND | ND | ND | ND | ND | ND |
| 1,2,4-Trichlorobenzene | 0.07 | ND | ND | ND | ND | ND | ND |
| 1,1,1-Trichloroethane | 0.200 | ND | ND | ND | ND | ND | ND |
| 1,1,2-Trichloroethane | 0.005 | ND | ND | ND | ND | ND | ND |
| Trichloroethylene | 0.005 | ND | ND | ND | ND | ND | ND |
| Trichlorofluoromethane | 0.15 | ND | ND | ND | ND | ND | ND |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | 1.2 | ND | ND | ND | ND | ND | ND |
| Vinyl chloride | 0.0005 | ND | ND | ND | ND | ND | ND |
| Xylenes | 1.750 | ND | ND | ND | ND | ND | ND |
| Total Trihalomethanes (d) | 0.10 | 0.039 | 0.038 | 0.056 | 0.040 | 0.063 | 0.020-0.088 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| INORGANIC CHEMICALS (mg/L) | | | | | | | |
| Aluminum | 1(#0.2) | 0.161 | 0.169 | 0.083 | 0.220 | 0.006 | ND-0.344 |
| Antimony | 0.006 | ND | ND | ND | ND | ND | ND |
| Arsenic | 0.05 | 0.0021 | 0.0022 | ND | 0.0020 | ND | ND-0.0030 |
| Asbestos (e) | 7 | ND | ND | ND | ND | ND | ND |
| Barium | 1 | 0.119 | 0.116 | 0.036 | 0.117 | 0.030 | 0.030-0.126 |
| Beryllium | 0.004 | ND | ND | ND | ND | ND | ND |
| Cadmium | 0.005 | ND | ND | ND | ND | ND | ND |
| Chromium | 0.05 | ND | ND | ND | ND | ND | ND |
| Copper | (f)(#1.0) | ND | ND | ND | ND | ND | ND-0.011 |
| Cyanide | 0.2 | ND | ND | ND | ND | ND | ND |
| Fluoride (g) | 1.4-2.4 | 0.22 | 0.23 | 0.26 | 0.21 | 0.10 | 0.08-0.30 |
| Lead | (f) | ND | ND | ND | ND | ND | ND |
| Mercury | 0.002 | ND | ND | ND | ND | ND | ND |
| Nickel | 0.1 | 0.004 | 0.005 | 0.005 | 0.004 | ND | ND-0.008 |
| Nitrate (as N) (h) | 10 | 0.21 | 0.22 | 0.42 | 0.13 | 0.57 | ND-0.94 |
| Nitrite (as N) | 1 | ND | ND | ND | ND | ND | ND |
| Nitrate plus Nitrite (as N) | 10 | 0.21 | 0.22 | 0.42 | 0.13 | 0.57 | ND-0.94 |
| Selenium | 0.05 | ND | ND | ND | ND | ND | ND |
| Thallium | 0.002 | ND | ND | ND | ND | ND | ND |
| RADIONUCLIDES (pCi/L) analyzed every four years, for four consecutive quarters | | | sampled from 1/94 to 1/95 | | | | |
| Gross Alpha | 15 | 6.6 | 6.5 | 3.0 | 4.9 | 1.4 | ND-11.7 |
| Gross Beta | 50 | 6.8 | 7.8 | 5.7 | 7.7 | 4.6 | ND-17.8 |
| Radium-226 (i) | 5 | ND | 1.2 | 1.0 | ND | ND | ND-2.9 |
| Radium-228 (i) | 5 | 1.0 | ND | ND | ND | ND | ND-1.6 |
| Radon-222 | NS | ND | ND | ND | ND | ND | ND-91 |
| Strontium-90 | 8 | ND | ND | ND | ND | ND | ND-2.3 |
| Tritium | 20,000 | 1262 | ND | ND | ND | ND | ND-4473 |
| Uranium | 20 | 4.9 | 4.4 | 2.3 | 3.4 | ND | ND-5.7 |
| SECONDARY STANDARDS—Aesthetic Standards | | | | | | | |
| CHEMICAL PARAMETERS | | | | | | | |
| Chloride (mg/L) | **250 | 91 | 91 | 53 | 87 | 55 | 43-102 |
| Color (units) | 15 | 3 | 2 | 3 | 3 | 3 | 1-4 |
| Corrosivity | noncorrosive | (j) | (j) | (j) | (j) | (j) | (j) |
| Foaming Agents-MBAS (mg/L) | 0.5 | ND | ND | ND | ND | ND | ND |
| Iron (mg/L) | 0.3 | ND | ND | ND | ND | ND | ND |
| Manganese (mg/L) | 0.05 | ND | ND | ND | ND | ND | ND |
| Odor Threshold (units) | 3 | (k) | (k) | (k) | (k) | (k) | (k) |
| pH (units) | NS | 8.04 | 8.04 | 8.14 | 8.07 | 8.49 | 8.00-8.52 |
| Silver (mg/L) | 0.1 | ND | ND | ND | ND | ND | ND |
| Specific Conductance (µmho/cm) | **900 | 984 | 997 | 620 | 943 | 405 | 336-1114 |
| Sulfate (mg/L) | **250 | 244 | 248 | 120 | 227 | 37 | 24-294 |
| Total Dissolved Solids (mg/L) | **500 | 611 | 622 | 371 | 582 | 227 | 190-715 |
| Plant Effluent Turbidity (NTU) | 5 | 0.07 | 0.08 | 0.07 | 0.08 | 0.08 | 0.06-0.12 |
| Zinc (mg/L) | 5.0 | ND | ND | ND | ND | ND | ND |
| ADDITIONAL PARAMETERS | | | | | | | |
| Alkalinity as $CaCO_3$ (mg/L) | NS | 114 | 118 | 100 | 115 | 70 | 65-132 |
| Calcium (mg/L) | NS | 68 | 69 | 44 | 66 | 20 | 17-80 |
| Hardness as $CaCO_3$ (mg/L) | NS | 283 | 288 | 182 | 272 | 93 | 82-327 |
| Heterotrophic Plate Count (CFU/mL) (l) | NS | <1 | <1 | <1 | <1 | 5.1 | <1-1200 |
| Magnesium (mg/L) | NS | 27.5 | 28 | 17.5 | 26.5 | 11 | 9.5-31.5 |
| Potassium (mg/L) | NS | 4.5 | 4.5 | 3.0 | 4.3 | 2.5 | 2.1-5.1 |
| Sodium (mg/L) | NS | 96 | 97 | 55 | 92 | 42 | 33-112 |
| Total Organic Carbon (mg/L) | NS | 2.38 | 2.45 | 2.94 | 2.59 | 2.47 | 2.03-3.19 |

KEY TO ABBREVIATIONS

MCL = State Maximum Contaminant Level
NS = No Standard
NC = Not Collected
ND = None Detected. Detection limits available on request.
NTU = Nephelometric Turbidity Units, a measure of the suspended material in water.
mg/L = milligrams per liter (parts per million)
pCi/L = picoCuries per liter
CFU/100 mL = colony-forming units per 100 milliliters
CFU/mL = colony-forming units per milliliter
µmho/cm = micromhos per centimeter
# = secondary standard
** = recommended level

The standards for acrylamide and epichlorohydrin are treatment techniques with which Metropolitan complies

(a) Data shown are annual averages and ranges
(b) The turbidity level of the filtered water shall be less than or equal to 0.5 NTU in 95% of the measurements taken each month and shall not exceed 5.0 NTU at any time.
(c) Total coliform MCLs: No more than 5.0% of the monthly samples may be total coliform-positive. Fecal coliform/*E. coli* MCLs: The occurrence of 2 consecutive total coliform-positive samples, one of which contains fecal coliform/*E. coli*, constitutes an acute MCL violation. These MCLs were not violated in 1996. Standards and results are based on distribution system monthly sampling averages. Compliance is based on the combined distribution system sampling from all the filtration plants. 11,185 samples were analyzed in 1996.
(d) Calculated from the average of monthly filtration plant effluent samples. Compliance is based on a running annual average of more than 40 quarterly distribution system samples, which was 0.050 mg/L for 1996.
(e) Measured in million fibers per liter (longer than 10 microns).
(f) The standards for lead and copper are treatment techniques requiring agencies to optimize corrosion control treatment.
(g) MCL is dependent upon air temperature.
(h) MCL is 45 mg/L as Nitrate, which equals 10.16 mg/L as N.
(i) Standards are for Radium-226 and -228 combined.
(j) Corrosivity is measured by the Langlier Stability Index. A positive index, indicating non-corrosivity, was maintained at the plant effluents.
(k) Metropolitan has developed a flavor-profile analysis method that can more accurately detect odor occurrences. For more information, contact MWD.
(l) Pour plate technique, 48-hour incubation at 35°C, monthly averages.

If you have additional questions or concerns regarding the quality of your water please call Mr. Mark D. Beuhler, Director of Water Quality, at (213) 217-6850 or write to him at the Metropolitan Water District of Southern California, P.O. Box 54153, Los Angeles, California 90054-0153.